

**REMARKS**

Claims 1-18 are currently pending in this application and have been examined on the merits. All pending claims are rejected as follows:

- (a) Claims 1-8, 14, and 16-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase (JP 2002121452, Machine English translation and English translation of abstract) in view of Opre (US 6,284,720);
- (b) Claims 9-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase in view of Opre, further in view of Nito (US 6,932,465);
- (c) Claims 12 and 13 rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase in view of Opre in view of Nito, further in view of Arnaud (US 2004/002840);
- (d) Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase in view of Opre, further in view of Bergomi (US 3,665,060);
- (e) Claims 16-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase in view of Opre, further in view of Isenberg (US 2,389,781).

Applicants have considered the rejections at length but respectfully disagree. In view of the current amendments and the arguments laid out below, Applicants submit that the claimed subject matter is not rendered obvious by the cited references. Favorable reconsideration and allowance of the claims are earnestly solicited.

**Rejections under 35 USC § 103(a) – Obviousness**

All pending claims 1-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwase in view of Opre, and further in view of additional references, including Nito, Arnaud, Bergomi and Isenberg. Applicants respectfully traverse. To avoid redundancy, Applicants incorporate by reference their arguments regarding Iwase, Opre, Nito, Arnaud, Bergomi and Isenberg in their May 5, 2009 Response.

As a preliminary matter, none of Iwase, Opre, Nito, Arnaud, Bergomi, or Isenberg teaches “an offset printing ink or varnish wherein *the solvent comprises at least one water-insoluble ester of a polycarboxylic acid having more than 2 carboxylic acid groups with a monohydric alcohol having at least 4 carbon atoms*” as recited in independent claim 1.

Specifically, Iwase teaches an offset printing ink comprising a solvent containing diester compound of the aliphatic dibasic acid. (Iwase at abstract and paragraph [0013]). Iwase does not teach an “ester of a polycarboxylic acid having more than 2 carboxylic acid groups.”

The Examiner alleged that “Opre teaches a biodegradable solvent where an organic co-solvent is an ester of citric acid (a polycarboxylic acid with 3 carboxylic acid groups) (col. 2, lines 63-65).” Office Action, at p. 2). Applicants respectfully disagree. Opre teaches “an environmentally friendly ink removal solvent” – in the same category as aliphatic ketone – useful for cleaning of cylinders of printing presses. (See Opre at col. 2, lines 40-41; col. 1, lines 59-65). Such “ink removal solvent” is not suitable as solvent for printing inks.

More importantly, Opre teaches “a C<sub>1</sub>-C<sub>4</sub> ester of a C<sub>3</sub>-C<sub>10</sub> dicarboxylic acid” as “organic co-solvent” and citric acid as “acidulent”:

The invention contemplates a composition comprising about 40 to about 70 weight percent of a C<sub>1</sub>-C<sub>4</sub> ester of lactic acid and about 1 to about 30 weight percent C<sub>1</sub>-C<sub>4</sub> ester of a C<sub>16</sub>-C<sub>20</sub> fatty acid having a melting point of -10°C or less. In one embodiment of the invention, the composition also comprises about 10 to about 30 weight percent of an organic co-solvent; about 10 to about 30 weight percent of a surfactant; zero to about 5 weight percent of an acidulent; zero to about 10 weight percent of an emulsifying agent; and zero to about 5 weight percent of a fragrance.

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Preferably, the organic co-solvent is a C<sub>1</sub>-C<sub>4</sub> ester of a C<sub>3</sub>-C<sub>10</sub> dicarboxylic acid. Preferably, the acidulent is citric acid. A preferred emulsifying agent is a C<sub>17</sub>-C<sub>20</sub> fatty acid mono- or di-glyceride or a mixture of mono- or di-glycerides.

(Opre at col. 2, lines 45-67) (emphasis added). Applicants submit that the “organic co-solvent” in Opre is also a **diester**, not an “ester of a polycarboxylic acid having more than 2 carboxylic acid groups.” It is not a poly-ester of citric acid either.

Further, the citric acid in Opre is used as an “acidulent” – from French “*acidulant*,” “to acidulate,” *i.e.*, to make acid or slightly acid. (See Webster’s Ninth New Collegiate Dictionary, 1991, p. 51, submitted herewith). The word “acidulant” means acidic additives:

Any of a number of acids (chiefly organic) either occurring naturally in fruits and vegetables or used as additives in food processing. They function in the following ways: (1) as bacteriostats in processed foods, (2) as aids to the sterilization of canned foods by lowering the pH, (3) as chelating agents for metal ions such as iron and copper which catalyze rancidity reactions in fats, (4) as flavor enhancers by offsetting excessive sweetness by their tart taste. Commonly used acidulants are citric, acetic, fumaric, ascorbic, propionic, lactic, adipic, malic, sorbic, and tartaric acids.

(Hawley’s Condensed Chemical Dictionary, 13th Ed., 1997, p. 16, submitted herewith).

Applicants submit that the citric acid in Opre is not an ester or part of the “organic co-solvent.”

Therefore, none of the cited prior art, including Iwase and Opre, teaches an “ester of a polycarboxylic acid having more than 2 carboxylic acid groups” as solvent, in printing ink or not in printing ink. Iwase specifically teaches **diesters**, as does Opre (even though it is not in relevant art). Unlike what the Examiner alleged, it would **not** have been obvious for a person skilled in the art to combine the teachings of Iwase (and Opre) to create the present invention, even in consideration of environmental benefits. See MEPE § 2141 (“The gap between the prior art and the claimed invention may not be ‘so great as to render the [claim] nonobvious to one reasonably skilled in the art.’” Quoting *Dann v. Johnston*, 425 U.S. 219, 230, 189 USPQ 257, 261 (1976)).

For a rejection of obviousness, a reasonable expectation of success in combining the teaching of references is **required**. See MPEP 2143.02; *KSR International Co. v. Teleflex Inc.*,

550 U.S. 398, 127 S.Ct. 1727, 82 USPQ2d 1385, 1395 (2007); *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 1207-08, 18 USPQ2d 1016, 1022-23 (Fed. Cir. 1991).

Applicants respectfully submit that a person of ordinary skill in the art would not have a reasonable expectation of success in combining the teaching of Iwase and Opre, Nito, Arnaud, Bergomi or Isenberg to reach the present invention as claimed.

Accordingly, Iwase, in view of Opre, Nito, Arnaud, Bergomi, or Isenberg, does not render the pending claims obvious. Withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

### **Conclusion**

Applicants submit that all of the pending claims are now in condition for allowance and a Notice to that effect is solicited. If this *Response to Office Action* does not otherwise result in the issue of such Notice, the Examiner is urged to contact Applicants' undersigned counsel for discussion.

No extra fee is believed to be due for the filing of this Amendment and Response to Office Action. However, the Director is hereby authorized to charge all fees due, and credit any overpayments, to Deposit Account No. 50-0540.

Respectfully submitted,

Date: December 8, 2009

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